

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (currently amended) Method for producing an anisotropic magnetic powder from magnetic scrap material to be recycled, comprising:

- providing a starting material based on an SE-TM-B alloy, wherein SE is a rare earth element including yttrium and TM is a transition metal, said starting material comprising a magnetic material with an anisotropic orientation and an average grain size of less than 1 mm, a hard magnetic content greater than 90% by volume, and/or foreign phases smaller than 0.5 mm in size,

- producing a mixture having a TM_xB phase in said starting material by

- performing a first hydrogenation process on said starting material, said first hydrogenation process comprising heating under a hydrogen pressure to produce a hydride, and then

- performing a second hydrogenation process at a hydrogen pressure and an elevated temperature that induces a phase transition to produce said TM_xB phase, and afterward

- performing a dehydrogenation process and producing a reverse phase transition.

2. (currently amended) Method for producing an anisotropic magnetic powder from magnetic scrap material to be recycled, comprising:

- providing a starting material based on an SE-TM-B alloy, where SE is a rare earth element including yttrium and TM is a transition metal, said starting material comprising magnetic scrap metal,

- producing a mixture having a TM_xB phase in said starting material by

performing a first hydrogenation process on said starting material, said first hydrogenation process comprising heating under a hydrogenation pressure to create a hydride, and then

performing a second hydrogenation process at a hydrogenation pressure and at an elevated temperature which induces a phase transition to produce said TM_5B phase, and afterward

- performing a dehydrogenation process and producing a reverse phase transition.

3. (previously presented) Method according to Claim 1, in which the starting material comprises a permanent magnetic material with a hard magnetic phase $SE_2TM_{14}B$, wherein SE is a rare earth element including Y and TM is a transition metal.

4. (previously presented) Method according to Claim 1, in which at least one of the elements Fe, Ni or Co is provided as the transition metal.

5. (previously presented) Method according to claim 1, in which additives including amounts of C, O, N and/or S are present.

6. (cancelled)

7. (previously presented) Method according to claim 1, in which the starting material comprises a magnetic material with an average grain size smaller than 0.1 mm.

8. (previously presented) Method according to claim 1, in which the starting material is ground and screened or fractionated before the hydrogenation/dehydrogenation treatment.

9. (previously presented) Method according to claim 1, in which the starting material comprises a magnetic powder with a crystal size amounting to at most 75% of the particle size.

10. (previously presented) Method according to claim 1, in which the starting material is cleaned, especially removing foreign phase fractions.

11. (previously presented) Method according to claim 1, in which the starting material is cleaned by annealing *in vacuo*, in a noble gas or in hydrogen before the hydrogenation/dehydrogenation treatment.

12. (previously presented) Method according to claim 1, in which a heat treatment is performed in particular at a temperature up to 600°C under a noble gas or a vacuum atmosphere after the hydrogenation/dehydrogenation treatment.

13. (previously presented) Method according to claim 1, in which the magnetic powder that is produced is homogenized.

14. (previously presented) Method according to claim 1, in which the magnetic powder produced is freed of a coarse fraction greater than 0.5 mm in size by screening.

15. (previously presented) Method according to claim 1, in which the magnetic powder is supplied with a particle fraction of max. 10% particles <32 µm in size.

16. (previously presented) Method according to claim 1, in which the magnetic powder is coated.

17. (previously presented) Method according to claim 1, wherein B is partially replaced by C.

18. (previously presented) Plastic or metal bonded magnet manufactured using a magnetic powder produced by a method according to claim 1.

19. (original) Magnet according to Claim 18, with an energy product BH_{max} greater than 80 kJ/m^3 .
20. (previously presented) Magnet according to Claim 18, with a degree of orientation equal to or greater than 70%.
21. (previously presented) Magnet according to Claim 18, with a degree of filling of magnetic fractions of at least 63 vol%.
22. (previously presented) Method according to Claim 1 in which TM_xB is Fe_2B .
23. (previously presented) Method according to Claim 2 in which TM_xB is Fe_2B .